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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,652	10/01/2003	Robert C. Chang	SANDP035	8971
10027	7590	11/28/2005	EXAMINER	
ANDERSON, LEVINE & LINTEL L.L.P.			PEERS, CHASE W	
14785 PRESTON ROAD			ART UNIT	
SUITE 650			PAPER NUMBER	
DALLAS, TX 75254			2186	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/676,652	Applicant(s) CHANG ET AL.	
	Examiner Chase Peers	Art Unit 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: "irregardless" on line 24 of page 12 is incorrect word usage. The word you were looking for was "regardless." Appropriate correction is required.

Claim Objections

2. Claim 42 objected to because of the following informalities: Claim 42 refers to claim 34 as its independent claim, but by the broadest reasonable interpretation derived from the listing of the claims, it should refer to claim 35. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

All claims rejected under 35 U.S.C. 102(b) as being clearly anticipated by Wells (Pat No 5341339).

Regarding claims 1, 8, and 13, Wells describes mapping a plurality of logical blocks to a physical block, providing contents associated with the first and second logical blocks to the physical block, which is normal for a flash storage system (column

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3, lines 3-15), the blocks being associated with a non-volatile memory system, a flash storage system by definition is non-volatile, (column 1, lines 10-14) and providing contents associated with a first and second logical block (column 2, lines 47-61).

Regarding claims 2-5, 9-11, and 14-16, Wells discloses identifying first block includes determining if the first physical block has a low erase count (figure 2, item 21 and column 9, lines 47-51), identifying first or second block includes determining when the contents associates with the block are associated with less than a first predetermined number of groups associated with the first of second block, each group associated with at least one logical page and identifying second block includes determining when a number of groups associated with the second block is less than or equal to a total number of groups associated with the physical block (column 11, lines 20-32).

Regarding claims 6, 7, 17, and 18, Wells teaches the use of having the first block mapped to the physical block when identified (figure 2, items 32 and 34, column 11, lines 20-32, and column 11, lines 42-54), reclaiming a first block associated with a the first or second logical block after providing contents associated with the first and second logical blocks to the physical block, and reclaiming a second block associated with a the second logical block after providing contents associated with the first and second logical blocks to the physical block (column 11, line 58 to column 12, line 5).

Regarding claims 12,19, 34, and 42, Wells teaches the use of a non-volatile flash storage system (column 4,lines 43-52), which covers CompactFlash, MMC, SD, as well

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as, xD, MemoryStick, and USB flash drives (all of these employ non-volatile flash memory for storage).

Regarding claims 20-23 25-30, 32, 33, 35-38, 40, and 41, Wells discloses associating a first logical block with at least a first physical block (associated with a non-volatile memory system) (column 2, lines 47-61, and column 3, lines 7-22), determining when a first physical block is associated with a second logical block (column 11, lines 20-32), determining when it's appropriate to map first logical block to first physical block when it's determined that a first physical block is associated with the second logical block, mapping first logical block to a first physical block when it's determined that it's appropriate to map a first logical block to a first physical block, determining and then mapping a third logical block to a first physical block when it's appropriate, determining and then mapping a first logical block to a second physical block when it's appropriate, and mapping a first group of logical pages in a first logical block to a first physical block and mapping a second group of logical pages in a first logical block to a second physical block (figure 2, items 32 and 34, column 11, lines 20-32, and column 11, lines 42-54), storing contents associated with the first logical block into the first physical block (column 2, lines 47-61).

Regarding claims 24, 31, and 39, Wells describes a first logical block that includes a plurality of logical pages (column 3, lines 41-53), the plurality being grouped into a plurality of logical groups (column 2, lines 47-61, and column 3, lines 7-22), adhering the first physical block includes a plurality of physical pages (column 3, lines 7-22), the plurality of physical pages being groups into a plurality of physical groups

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(column 2, lines 47-58), and storing the contents associated with a first logical group of plurality of logical groups into a first physical groups of a plurality of physical groups (column 2, lines 47-61, and column 3, lines 7-22).

It should also be noted that although Wells does not expressly state exactly how many logical and physical blocks are used in the process, the erasing process can go on for a while and use many of both logical and physical blocks if the free space is spread among the other blocks or there are other dirty blocks that will also be cleaned.

Other Relevant Art Cited by the Examiner

Although Estakhri (6772274) Fecteau et al. (5561778, 5579499, 5594881), Eilert et al. (5095420), and Mirza et al. (5375214) were not used by the examiner, all are relevant art and should not be dismissed as dissimilar art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chase Peers whose telephone number is (571) 272-6757. The examiner can normally be reached on from Monday to Friday, 8AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PIERRE BATAILLE
PRIMARY EXAMINER